

Micromachined Alkali-Atom Vapor Cells and Method of Fabrication

Abstract of the Disclosure

A method of fabricating compact alkali vapor filled cells that have volumes of 1 cm^3 or less that are useful in atomic frequency reference devices such as atomic clocks. According to one embodiment the alkali vapor filled cells are formed by sealing the ends of small hollow glass fibers. According to another embodiment the alkali vapor filled cells are formed by anodic bonding of glass plates to silicon wafers to seal the openings of holes formed in the silicon wafers. The anodic bonding method of fabricating the alkali vapor filled cells enables the production of semi-monolithic integrated physics packages of various designs.